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157	7590	05/17/2006	EXAMINER	
BAYER MATERIAL SCIENCE LLC 100 BAYER ROAD PITTSBURGH, PA 15205			FEELY, MICHAEL J	
			ART UNIT	PAPER NUMBER
			1712	
DATE MAILED: 05/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,906

Applicant(s)

BIER ET AL.

Examiner

Michael J. Feely

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-14, 16-26 and 28 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 15 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Pending Claims

Claims 1-28 are pending.

Previous Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The rejection of claims 1-5, 8-24, 27, and 28 under 35 U.S.C. 102(b) as being anticipated by Mennig et al. (WO 01/30922) has been overcome by amendment.

Previous Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. The rejection of claims 6, 25, and 26 under 35 U.S.C. 103(a) as being unpatentable over Mennig et al. (WO 01/30922) has been overcome by amendment.
5. The rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Mennig et al. (WO 01/30922) in view of Mager et al. (US Pat. No. 6,673,458) has been overcome by amendment.

Terminal Disclaimer

6. The terminal disclaimer filed on February 27, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any

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patent granted on Application Serial No. 10/673,960 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Previous Double Patenting

7. The provisional rejection of claims 1-9 and 11-28 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of copending Application No. 10/673,960 (US 2004/0131793) has been overcome with a timely filed terminal disclaimer.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 8, 10-12, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 8 and 10-12, these claims appear to broaden the scope of layer (3) set forth in claim 1. The hydrolysis composition of layer (3) in claim 1 **consists** of either (a) alone or (a) in combination with (b). The limitations of claims 8 and 10-12 either suggest or explicitly disclose the presence of additional materials (claim 8: water; claim 10: acid; claim 11: solids; claim 12: solvent).

Regarding claim 14, it is unclear what "VO" represents.

Claim Interpretation

10. The scope of claim 1 comprises layers (1), (2), and (3), wherein layer (3) consists of (a) or (a) & (b) together. The following should be noted regarding layer 3:

- **(A)** When layer (3) consists of only (a), the scope of layer (3) overlaps the scope of layer (2) when M is Si. This overlapping scope includes two identical layers stacked on one another, essentially forming one single layer. In this instance, the recitation of a single layer or multiple layers that satisfy the limitations of both layers (2) and (3) would anticipate the claim.
- **(B)** When layer (3) consists of both (a) and (b), the scope of layer (3) overlaps the scope of layer (2). This overlapping scope includes two identical layers stacked on one another, essentially forming one single layer. In this instance, the recitation of a single layer that satisfies the limitations of both layers (2) and (3) would anticipate the claims.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-3, 5, 13, 16, 18, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoldas et al. (US Pat. No. 4,753,827).

This rejection is based on interpretation (B) of claim 1.

Regarding claims 1-3, 5, 13, 16, 18, and 22, Yoldas et al. disclose: **(1)** a multilayered article comprising:

- (1) a substrate (S) (Abstract; column 3, lines 42-52);
- (2) a scratch resistant layer (SR) prepared by curing a scratch-resistant coating composition comprising a polycondensate prepared from at least one silane, said polycondensate being prepared by a sol-gel process (column 2, line 33 through column 3, line 55); and
- (3) a top layer (T) prepared by curing a top layer coating composition prepared by hydrolyzing a composition consisting of: (a) at least one compound $M(R')_m$ (I) wherein M is an element selected from the group consisting of Si, Ti, Zr, Sn, Ce, Al, B, Vo, In and Zn, R' represents a hydrolysable radical, and m is an integer from 2 to 4; and (b) optionally at least one compound $R_bSiR'_a$ (II) wherein the radicals R' and R are the same or different, R' is as defined for general formula (I), R represents a group selected from an alkyl group, an alkenyl group, an aryl group, a hydrocarbon group with at least one halogen group, an epoxide group, a glycidyloxy group, an amino group, a mercapto group, a methacryloxy group and a cyano group, and a and b independently of one another have a value from 1 to 3, provided that the sum of a and b is four (column 2, line 33 through column 3, line 55);

wherein said scratch-resistant layer is interposed between said substrate and said top layer (column 2, line 33 through column 3, line 55);

- (2) wherein said substrate comprises a plastic (Abstract; column 3, lines 42-52);
- (3) wherein the polycondensate of the scratch resistant coating composition is prepared from methyl-silane (column 2, lines 32-51);

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(5) wherein the polycondensate of the scratch-resistant coating composition is prepared from at least one silyl acrylate (column 2, lines 32-51);

(13) wherein M of formula (I) is selected from the group consisting of Si, Ti, Zr, Sn and Ce, and m is 4 (column 2, lines 60-67);

(16) wherein the hydrolysable radical R' of formulas (I) and (II) is selected from the group consisting of halogens, C₁₋₄ alkoxy, C₆₋₁₀ aryloxy, C₁₋₄ acyloxy and alkylcarbonyl (column 2, line 33 through column 3, line 55);

(18) wherein formula (II) is selected from at least one of glycidyoxy-propyl-tri-methoxy-silane, methyltriethoxysilane and methacryloxy-propyl-trimethoxysilane (column 2, lines 32-51; Examples); and

(22) further comprising a primer layer (P) interposed between said substrate and said scratch-resistant layer (column 4, lines 12-28).

13. Claims 1, 5, 12-14, 16, and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Aben et al. (US Pat. No. 5,742,119).

This rejection is based on interpretation (B) of claim 1.

Regarding claims 1, 5, 12-14, 16, and 18-21, Aben et al. disclose: (1) a multilayered article comprising:

(1) a substrate (S) (Abstract);

(2) a scratch resistant layer (SR) prepared by curing a scratch-resistant coating composition comprising a polycondensate prepared from at least one silane, said polycondensate

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being prepared by a sol-gel process (column 3, line 51 through column 4, line 12; column 8, line 3 through column 9, line 45); and

(3) a top layer (T) prepared by curing a top layer coating composition prepared by hydrolyzing a composition consisting of: (a) at least one compound $M(R')_m$ (I) wherein M is an element selected from the group consisting of Si, Ti, Zr, Sn, Ce, Al, B, Vo, In and Zn, R' represents a hydrolysable radical, and m is an integer from 2 to 4; and (b) optionally at least one compound $R_bSiR'_a$ (II) wherein the radicals R' and R are the same or different, R' is as defined for general formula (I), R represents a group selected from an alkyl group, an alkenyl group, an aryl group, a hydrocarbon group with at least one halogen group, an epoxide group, a glycidyloxy group, an amino group, a mercapto group, a methacryloxy group and a cyano group, and a and b independently of one another have a value from 1 to 3, provided that the sum of a and b is four (column 3, line 51 through column 4, line 12; column 8, line 3 through column 9, line 45);

wherein said scratch-resistant layer is interposed between said substrate and said top layer (column 3, line 51 through column 4, line 12; column 8, line 3 through column 9, line 45);

(5) wherein the polycondensate of the scratch-resistant coating composition is prepared from at least one silyl acrylate (column 8, lines 18-58);

(12) wherein the hydrolysis of the composition of the top layer coating composition is conducted in the presence of a solvent selected from at least one of water, an alcohol having a boiling point below 120°C and an alkoxy-alcohol (column 9, lines 15-19);

(13) wherein M of formula (I) is selected from the group consisting of Si, Ti, Zr, Sn and Ce, and m is 4 (column 8, lines 58-64);

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(14) wherein M of formula (I) is selected from the group consisting of Al, B, Vo and In, and m is 3 (column 8, lines 58-64);

(16) wherein the hydrolysable radical R' of formulas (I) and (II) is selected from the group consisting of halogens, C₁₋₄ alkoxy, C₆₋₁₀ aryloxy, C₁₋₄ acyloxy and alkylcarbonyl (column 8, lines 17-64);

(18) wherein formula (II) is selected from at least one of glycidyoxy-propyl-tri-methoxy-silane, methyltriethoxysilane and methacryloxy-propyl-trimethoxysilane (column 8, lines 18-58);

(19) wherein after completion of the hydrolysis of the composition of the top layer coating composition a hydrolysis product is formed and, at least one of: (a) at least one additive selected from the group consisting of flow control agents, dyestuffs, stabilizers and inorganic fillers is added to the hydrolysis product; and (b) the concentration of the hydrolysis product is adjusted to 0.02 to 15 wt% by adding at least one of alcohols and alkoxy-alcohols to the hydrolysis product (column 9, lines 5-45; Examples);

(20) wherein the scratch-resistant layer has a thickness of 0.5 to 30 microns (column 3, lines 51-57); and

(21) wherein the top layer has a thickness of 0.1 to 3.0 microns (column 3, lines 51-57).

14. Claims 1, 8, 9, 12, 13, 16-19, 23, 24, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Aben et al. (US Pat. No. 5,742,119).

This rejection is based on interpretation (A) of claim 1.

Regarding claims 1, 8, 9, 12, 13, and 16-19, Aben et al. disclose: (I) a multilayered article comprising:

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(1) a substrate (S) (Abstract);

(2) a scratch resistant layer (SR) prepared by curing a scratch-resistant coating composition comprising a polycondensate prepared from at least one silane, said polycondensate being prepared by a sol-gel process (column 3, lines 43-50; column 6, line 55 through column 7, line 50); and

(3) a top layer (T) prepared by curing a top layer coating composition prepared by hydrolyzing a composition consisting of: (a) at least one compound $M(R')_m$ (I) wherein M is an element selected from the group consisting of Si, Ti, Zr, Sn, Ce, Al, B, V, In and Zn, R' represents a hydrolysable radical, and m is an integer from 2 to 4; and (b) optionally at least one compound $R_bSiR'_a$ (II) wherein the radicals R' and R are the same or different, R' is as defined for general formula (I), R represents a group selected from an alkyl group, an alkenyl group, an aryl group, a hydrocarbon group with at least one halogen group, an epoxide group, a glycidyloxy group, an amino group, a mercapto group, a methacryloxy group and a cyano group, and a and b independently of one another have a value from 1 to 3, provided that the sum of a and b is four (column 3, lines 43-50; column 6, line 55 through column 7, line 50);

wherein said scratch-resistant layer is interposed between said substrate and said top layer (column 3, lines 43-50; column 6, line 55 through column 7, line 50);

(8) wherein the hydrolysis of the composition of the top layer coating composition is conducted in the presence of at least 0.6 mol of water, based on 1 mol of hydrolysable radicals R' (column 7, lines 14-21; Examples);

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(9) wherein during hydrolysis of the composition of the top layer coating composition, the compound of formula (II) is present in an amount of less than 0.7 mol, based on 1 mol of the compound of formula I (*optional component not required*);

(12) wherein the hydrolysis of the composition of the top layer coating composition is conducted in the presence of a solvent selected from at least one of water, an alcohol having a boiling point below 120°C and an alkoxy-alcohol (column 8, lines 14-21; Examples);

(13) wherein M of formula (I) is selected from the group consisting of Si, Ti, Zr, Sn and Ce, and m is 4 (column 7, lines 14-21);

(16) wherein the hydrolysable radical R' of formulas (I) and (II) is selected from the group consisting of halogens, C₁₋₄ alkoxy, C₆₋₁₀ aryloxy, C₁₋₄ acyloxy and alkylcarbonyl (column 7, lines 14-21);

(17) wherein formula (I) is selected from at least one tetraalkoxysilane (column 7, lines 14-21);

(18) wherein formula (II) is selected from at least one of glycidyoxy-propyl-tri-methoxy-silane, methyltriethoxysilane and methacryloxy-propyl-trimethoxysilane (*optional component not required*); and

(19) wherein after completion of the hydrolysis of the composition of the top layer coating composition a hydrolysis product is formed and, at least one of: (a) at least one additive selected from the group consisting of flow control agents, dyestuffs, stabilizers and inorganic fillers is added to the hydrolysis product; and (b) the concentration of the hydrolysis product is adjusted to 0.02 to 15 wt% by adding at least one of alcohols and alkoxy-alcohols to the hydrolysis product (column 7, lines 5-21; column 9, lines 36-45).

Regarding claims 23, 24, and 28, Aben et al. disclose: **(23)** a process of preparing a multilayered article comprising the following steps:

(a) providing a substrate (S) (column 12, lines 6-51);

(b) forming a scratch resistant layer (SR) by applying a scratch-resistant coating composition to a surface of said substrate, and partially curing the applied scratch-resistant coating composition comprising a polycondensate prepared from at least one silane, said polycondensate being prepared by a sol-gel process (column 12, lines 6-51);

(c) forming a top layer (T) by applying a top layer coating composition to the scratch-resistant layer, said top layer coating composition being prepared by hydrolyzing a composition consisting of: (a) at least one compound $M(R')_m$ (I) wherein M is an element selected from the group consisting of Si, Ti, Zr, Sn, Ce, Al, B, V, In and Zn, R' represents a hydrolysable radical, and m is an integer from 2 to 4; and (b) optionally at least one compound $R_bSiR'_a$ (II) wherein the radicals R' and R are the same or different, R' is as defined for general formula (I), R represents a group selected from an alkyl group, an alkenyl group, an aryl group, a hydrocarbon group with at least one halogen group, an epoxide group, a glycidyloxy group, an amino group, a mercapto group, a methacryloxy group and a cyano group, and a and b independently of one another have a value from 1 to 3, provided that the sum of a and b is four (column 12, lines 6-51); and

(d) curing said scratch-resistant and top layers (column 12, lines 6-51);

(24) further comprising drying the scratch resistant-layer at a temperature of greater than 110°C, after the application of the scratch-resistant coating composition to said substrate (column

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12, lines 6-51); and (28) further comprising, applying a primer layer (P) to the substrate, and applying the scratch-resistant coating composition to the primer layer (column 12, lines 6-51).

Claim Rejections - 35 USC § 103

15. Claims 8, 10, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoldas et al. (US Pat. No. 4,753,827).

Regarding claims 8 and 10, Yoldas et al. use water and acid to hydrolyze their system (*see Example*); however, they fail to explicitly disclose the water concentration and pH range set forth in the instant claims.

It should be noted that one of ordinary skill in the art would have recognized that a proper amount of water would have been inherently required for the hydrolysis/condensation reaction to take place. Furthermore, one of ordinary skill in the art would have recognized that the acid is used as a catalyst for this reaction system, and the pH is merely an indicator of the speed at which the controlled reaction is allowed to proceed.

In light of this, it has been found that, “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation,” – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and, “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation,” – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed quantity of water and pH range in the reaction system of Yoldas et al. because both variables would have been recognized as result-effective variables that drive and control the reaction mechanism, resulting in optimum coating properties.

Regarding claims 20 and 21, Yoldas et al. fail to explicitly disclose a coating thickness. However, one of ordinary skill in the art would have recognized that a minimum thickness is required to obtain the desired anti-abrasion properties, while a maximum thickness is established to ensure structural integrity and cost-effectiveness of the coating.

In light of this, it has been found that, “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation,” – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and, “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation,” – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the coating of Yoldas et al. in the combined amounts of instant claims 20 and 21 because the coating thickness would have been recognized as a result-effective variable that ensures adequate abrasion-resistance, structural integrity, and cost-effectiveness.

16. Claim 10, 25, and 26 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Aben et al. (US Pat. No. 5,742,119).

Regarding claim 10, Aben et al. use water and acid to hydrolyze their system (*see Example*); however, they fail to explicitly disclose the water concentration set forth in the instant claim.

It should be noted that one of ordinary skill in the art would have recognized that a proper amount of water would have been inherently required for the hydrolysis/condensation reaction to take place. Furthermore, one of ordinary skill in the art would have recognized that the acid is used as a catalyst for this reaction system, and the pH is merely an indicator of the speed at which the controlled reaction is allowed to proceed.

In light of this, it has been found that, “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation,” – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and, “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation,” – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed quantity of water and pH range in the reaction system of Aben et al. because both variables would have been recognized as result-effective variables that drive and control the reaction mechanism, resulting in optimum coating properties.

Regarding claim 25, Aben et al. use a solvent in their scratch-resistant coating (column 12, lines 6-51; column 11, lines 1-31), which inherently qualifies as a *flow-control agent* to some degree; however, they are silent regarding the amount of this solvent.

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It should be firstly noted that applicant fails to show criticality for this range. Secondly, the skilled artisan would have recognized that the amount of this solvent is a result effective variable, wherein an effective amount is required to achieve the desired flow control (viscosity) modification to ensure a smooth coating.

In light of this, it has been found that, “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation,” – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and, “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation,” – *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use 0.01 to 3.0 wt% of flow control agent in the scratch resistant composition of Aben et al. because it has been found that where the general conditions of a result effective variable are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.

Regarding claim 26, adjusting the humidity in an effort to modify and/or optimize the curing process would have been obvious to the skilled artisan due to the hydrolysis/condensation nature of the curing reaction, which requires the presence of moisture (water) to proceed. The claimed humidity level of 50 to 75% RH overlaps with what would be considered ambient humidity conditions to the skilled artisan. Furthermore, with the lack of any specific teaching of

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humidity in the prior art, ambient humidity would have been an obvious choice to perform this curing process.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the relative humidity to 50 to 75% RH during the curing step of Aben et al. because the claimed range overlaps with standard ambient conditions. Furthermore, any modification of humidity would have been obvious to the skilled artisan because the hydrolysis/condensation nature of the curing mechanism requires moisture (water) to proceed. Such a modification would merely represent the optimization of a result-effective variable.

Allowable Subject Matter

17. Claims 6, 7, 15, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6, neither Yoldas et al. nor Aben et al. feature $\text{AlO}(\text{OH})$ nano-particles in their scratch-resistant coating.

Regarding claim 7, neither Yoldas et al. nor Aben et al. feature a polycondensate prepared from at least one multifunctional cyclic organosiloxane in their scratch-resistant coating.

Regarding claim 15, neither Yoldas et al. nor Aben et al. feature a Zn based layer.

Regarding claim 27, Aben et al. disclose a similar process, however they fail to teach or suggest an intermediate activation step of the scratch-resistant layer.

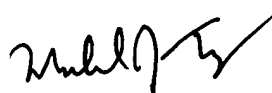
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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely
Primary Examiner
Art Unit 1712

May 12, 2006

**MICHAEL FEELY
PRIMARY EXAMINER**